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PHILADELPHIA, APRIL 13, 1878.

ORIGINAL LECTURES.

CLINICAL LECTURE
ON THE DIAGNOSIS AND TREATMENT OF REDUCIBLE HERNIA.

Delivered before the Medical Class of the University of Pennsylvania

BY D. HAYES AGNEW, M.D.,
Professor of Surgery in the Medical School.
(Reported for the *Medical Times*.)

HERNIAS are in general divided into three classes,—viz., *congenital* hernia, or that which exists at birth; *infantile* hernia, or that which comes on after birth, being produced by excessive crying or straining; and *acquired* or adult hernia. To my mind a much better division would be into *congenital* and *acquired* hernia, *acquired* to include the infantile and adult forms.

Let us first consider the congenital hernias. A congenital hernia may be either femoral or inguinal. You all know that at about the sixth or seventh month of pregnancy the child's testicles begin their descent in the inguinal canal. In the act of descending the testicles carry with them that portion of the peritoneum which is to form in time the tunica vaginalis testis. After the descent of these bodies, if development goes on properly, a contraction takes place in that part of the inguinal canal just below the external abdominal ring. This contraction, if it is perfect, shuts off completely the testes from the peritoneal cavity. But suppose that this contraction does not take place? The intestine may at any time slip down more or less through the external abdominal ring and so form a hernia. The same thing may occur in the case of an umbilical hernia. The normal contraction has not been accomplished, and so the intestines find an unnatural means of outlet.

In the case of acquired hernias there may not have been perhaps any arrested development, but the ring has not been firmly enough closed to prevent the forcible passage of the intestine. The infant or adult is suffering from a severe acute or chronic cough, strains violently perhaps, when the constriction suddenly dilates and the bowels slip through.

The signs of hernia are divisible into (1) general and (2) special.

Under general signs we have to consider (1) the presence of a tumor in certain definite regions, (*a*) in the inguinal region, (*b*) in the groin near Poupart's ligament, and (*c*) near the navel. (2) We find that the tumor is of variable size, being small at one time and large at another. (3) We are able to notice a decided change in position; the tumor is now present in the scrotum, and now has disappeared entirely from view. (4) The tumor is found to change its position with changes in the position of the body. When the patient stands upright the tumor is in view; when he lies prone it is gone from sight. (5) Percussion of the tumor, if it be an enterocele alone, elicits a tympanitic sound; if there is omentum alone, and no intestine, the sound will be flat as of a doughy mass; if both intestine and omentum be present, percussion will reveal flatness over one site and elsewhere resonance. (An omental hernia is more common on the left than on the right side.) (6) A reducible hernia can always be replaced by manipulation.

The special symptoms of hernia are those referable to the several varieties of the disease. *Complete oblique inguinal* hernia follows the course of the inguinal canal and makes its way into the scrotum.

This form of hernia is to be distinguished from hydrocele by the following special symptoms. (I may say, in passing, that the diagnosis between these two affections is not easy, and that the trocar is quite frequently thrust into the contents of an inguinal hernia, mistaking it for hydrocele.) (1) If we inquire carefully into a case of hydrocele we will find that the swelling began at the bottom of the scrotum and gradually extended upward: hernia, of course, begins above and goes downward. (2) When the patient lies down, a hernia (that is, a reducible hernia) can be pushed back or will disappear spontaneously. Of course this is not the case with hydrocele. (3) If the tumor be a hydrocele, by taking the patient into a dark room and placing a candle on one side of the mass, being careful to cut off all the rays of light from above, it will appear translucent. There would evidently be no translucency if the tumor contained omentum, or intestines, unless, indeed, there

were a partial dropsy of the sac, in which case part of the tumor would be partly translucent and partly opaque.

How is inguinal hernia to be distinguished from scrotal hæmatocele? Hæmatocele is always the result of some strain, blow, or fall. But hæmatocele gives, like hernia, an opaque tumor. How draw the distinction in this respect? The surest mode of diagnosis is the introduction of a very minute exploring needle. If hernia, no result will be had; if hæmatocele, there will be a few drops of blood; if hydrocele, a straw-colored liquid. It is generally held that an exploring needle can do no harm, and yet I am not quite sure that it is an entirely innocuous means of diagnosis.

Varicocele is, as you know, an enlargement of the spermatic veins. How is hernia to be distinguished from varicocele? (1) Varicocele occurs almost always (in 999 cases out of 1000) on the left side; hernia may be present on either side. (2) When you take hold of a varicocele you find, not a smooth and elastic, not even a doughy feel, but it is as if you had taken hold of a bundle of knotted skeins. A hernia is a smooth and elastic mass. (3) Let the patient take the recumbent position. Both hernia and varicocele would spontaneously disappear. But now press your finger on the external abdominal ring, and let the patient stand up again and cough. Varicocele will descend again, but not hernia. So much for the special symptoms of inguinal hernia.

There are three kinds of tumors from which femoral hernia is to be diagnosticated,—viz., psoas abscess, enlargement of the inguinal glands, and varicose enlargement of the saphenous veins where they enter into the femoral veins. What are the main points of distinction? (1) Psoas abscess must follow the course of the psoas muscle. It usually begins from disease of the condyles of the lumbar vertebræ. (2) Psoas abscess comes out of the ring external to the blood-vessels; femoral hernia is internal to them. (3) Where there is psoas abscess there is a history of previous bad health and a general strumous condition of the system.

The diagnosis between hernia and swollen inguinal glands is not such an easy matter, particularly as the swollen glands occupy almost exactly the same position as would be held by femoral hernia, lying as they do over the saphenous opening and near the course of Poupart's ligament. The diagnosis will therefore depend on the following points. (1) If the patient has had any venereal disease, or suffered from any injury to the feet, there is a tolerable presumption that the inguinal glands are swollen. (2) In health the inguinal glands can be isolated. This is also possible when they are diseased, but this process of separation is very difficult when they are glued together by syphilitic exudation. (3) Place your hand on the tumor and tell the patient to cough. There will be a distinct impulse felt if it is an enterocele, otherwise not. (This point of diagnosis is of no value as a mode of distinction between an omental hernia and inflamed glands.) (4) Intestines will give resonance upon percussion, glands dulness. (5) You find upon close examination that the tumor was not always *in situ;* that there has been occasional swelling for years; that the tumor was in the habit of appearing and disappearing. As inflamed glands do not change their place, the above facts would argue against their existence. (6) Hernia is usually entirely insensitive to pressure. Inflamed and swollen glands are apt to be highly sensitive.

As regards the modes of distinguishing an enlarged saphenous vein from a hernia, they are few and simple. (1) Cough will impart no impulse to an enlarged vein. (2) Press on the vein just below the site of the tumor; if pressure diminishes the size of the swelling, while upon the removal of the pressure it again fills, the tumor is evidently a venous enlargement; otherwise not.

There is but slight difficulty of diagnosis in cases of *umbilical* hernia. There is rarely any projection except that of hernia in the umbilical neighborhood. This brings us to a consideration of the treatment of hernia.

All forms of acquired (adult and infantile) hernia are curable, provided the hernia be restored and held in position until the hernial passages undergo constriction. Let us take, for example, a case of umbilical hernia in a child. A little tumor makes its appearance at the child's navel, which can be easily pressed back into the abdominal cavity. If the child strains or frets, the projection grows in size. All the treatment necessary in such a case is

the accurate application of a truss. You cannot put a truss on too early in such cases. In umbilical hernia the fitting on of a truss is a very simple matter. Take a good-sized cork and cut it into an oval shape, flattening it on one side. Then cut out a strip of sticking-plaster long enough to pass entirely round the body. Apply now the oval side of the cork over the site of the hernia, first placing a small piece of chamois between the cork and the skin, and then fasten the cork in position by means of the plaster. Porous plaster is perhaps better than adhesive plaster for this purpose, as it does not irritate the skin so much and will stick much longer. I strongly advise the use of home-made cork trusses in children, as they will keep in position much better and longer than trusses bought at the shops.

Where hernia occurs in the adult we have the various styles of artificial trusses from which to choose. These trusses are conical-shaped pads made of leather, hard wood, or ivory, and provided with elastic bands fastening round the body. You will find a great variety of trusses in the market. Some physicians prefer the leather-covered pad on account of the greater comfort allowed by it to the skin; some use the old French truss. In applying a truss for the cure of hernia there are certain indications which must be carried out to the letter if you expect success in your treatment. The application of a truss, therefore, calls for the possession of a certain amount of skill. The indications are, (1) the truss ought not to be worn unless it conforms exactly to the person of the wearer; (2) the truss must be so applied as to exert no more pressure than is demanded to keep the hernia in place. I constantly see the effects of the severe and protracted pressure exerted by ill-applied trusses. It is not perhaps so much the amount of pressure employed as where it is employed. As regards this matter of pressure, the old truss made of hard, polished wood is much more comfortable to the skin than the softer pads. The leather pad in time becomes saturated with perspiration, and so is extremely unwearable. As a general rule, the harder the pad the more comfortable is it to the skin. Pads are either single or double. As a truss, if applied only on one side, is very liable to slide out of position, it is sometimes necessary to use a double truss. I use the Gemrig truss with two pads very often. This truss is double, having two pads both in front and behind. As this truss is intended for one-sided hernia, one of the front pads presses harder than the other. This is a very popular truss. It scarcely ever changes its place.

In the case of femoral hernia it is very well to employ a movable pad which can be made to drop into the saphenous opening. This movable truss can be changed into a fixed truss for inguinal hernias. Here is a double soft leather truss. This hard rubber truss is very useful. By heating it you can easily model it to fit the outlines of any figure. There are various forms of the hard rubber truss. This specimen does not weigh more than two ounces altogether. It is very inexpensive, and never wears out. If the strap is made waterproof it can be worn in the bath.

Here is another form of truss constructed for the purpose of controlling hernias which are exceedingly hard to keep in place. It has a projecting centre-piece which is supposed to press right into the external abdominal ring, or saphenous opening, whichever the case may be. I do not place much confidence in this form of apparatus. It is but too certain to enlarge the hernial passage at the same time that it is holding the hernia in position.

When you advise any of your patients to use a truss you should always make it a rule to superintend its first application. If you cannot be present yourself, give your patient the following *directions*. (1) Never accept a truss until you get one which fits. (2) Try it by putting it on, and (*a*) stooping down and rising up suddenly; (*b*) by coughing violently and persistently; (*c*) by separating the limbs and stooping; (*d*) by crossing the limbs and sitting down; (*e*) by going through all kinds of motions. Of course the truss is not a proper one if the hernia slips away from it in the course of any of these motions.

In wearing a truss the following *precautions* must always be had. (1) The patient must never take off the truss till he or she is in the recumbent position. (2) Before putting it on again the parts must be rubbed until they are all aglow, so that an active circulation and full secretion are maintained. (3) The truss must be taken off the last thing before the patient retires,

and put on the first thing in the morning. (4) In the case of a child the truss should be worn all the time, both night and day, after the first feelings of discomfort have passed away. At first it must of course be taken off two or three times, while the skin is thoroughly rubbed and anointed, and then put on carefully again. If these rules are conscientiously adhered to, a cure may be expected in the course of two or three years. The truss, at any rate, should not be taken off sooner than that. I may say, in closing, that permanent cure is much more likely to ensue if a hard than if a soft pad has been employed.

ORIGINAL COMMUNICATIONS.

CHLORIDE OF AMMONIUM IN THE TREATMENT OF HEPATIC DISEASE.

BY WILLIAM STEWART, M.D.,

Surgeon-Major, British Army.

IN 1869, when stationed with my battalion in Rangoon, British Burmah, I first made known the value of chloride of ammonium in the treatment of hepatic congestion and tropical hepatitis. In a pamphlet published in 1870* I brought the subject prominently to the notice of the profession in India; and in subsequent papers in the *Madras Monthly Journal of Medical Science* and the *Indian Medical Gazette* I gave the result of further clinical observation and experience, and ventured on an explanation of the general and special action of the medicine on the congested or inflamed liver. Since then, the subject has received the attention of a number of careful and skilled observers, and at length the chloride of ammonium, "having obtained a great and well-deserved reputation, in India and other tropical countries, for the treatment of hepatic congestion, has been found to be of great utility in hepatic congestion in this country as well as in India."†

With the exception of Dr. H. C. Wood, who, in the second edition of his valuable treatise on Therapeutics, page 502, quotes from my paper in the *Indian Medical Gazette* of August 1, 1872, I am not aware that the subject has received the attention of American writers on medicine or therapeutics; and I am informed by that distinguished author that my various papers are "inaccessible absolutely to the general profession in America." Under these circumstances, I desire in the present paper to give a short account of the remarkable train of effects following the ingestion of the medicine in cases of hepatic congestion, and which, being manifested in any given obscure case, may be looked upon as *diagnostic* of hepatic disease.

I purpose also giving a résumé of the treatment of congestion of the liver and suppurative hepatitis as met with in India and other tropical climates, with a few cases in illustration, in which the characteristic and special symptoms produced by the drug have been recorded.

In active congestion of the liver the special and characteristic action of the medicine will be found to be more marked than in cases of chronic hepatitis, for reasons which will be apparent from a consideration of its modus operandi.‡ The dose necessary for its full therapeutic effect is gr. xx, and the only condition which contra-indicates its use is the existence of a dry and hot skin, in cases of hepatitis. Under such circumstances its use should not be commenced till the skin is rendered moist and perspirable by the administration of some simple diaphoretic mixture in repeated small doses, say ʒii liq. amm. acet. with ♏ v tinct. hyoscyami in each dose, every half-hour. In congestion of the liver (or acute hepatitis when the skin has been made moist or perspirable by the above means) the chloride should be at once commenced in twenty-grain doses twice or thrice daily, noting carefully its effects, which are striking and remarkably regular in the order of their occurrence.

As a general rule, about fifteen minutes after taking the medicine, the patient experiences a sensation of warmth in the epigastrium, which by and by extends, pervading the abdomen, and gradually becomes diffused over the entire cutaneous surface. The nervous system is at the same time exhilarated sympathetically and also through the circulation, for the patient now feels "light-headed" (as he generally

* Chloride of Ammonium: a Specific Therapeutic Agent in the Treatment of Hepatitis and Abscess of the Liver. Rangoon, 1870.

† Murchison, Clinical Lectures on Diseases of the Liver, second edition, London, 1877, pp. 136, 624.

‡ For an explanation of its therapeutic action, see my paper in *Madras Monthly Journal of Medical Science* for February and March, 1872.

expresses it), and at times drowsy. The acute pain previously experienced in the right hypochondrium and along the margins of the lower right ribs, extending, as the case may be, forward across the epigastrium or backward to the lumbar region, is either entirely removed, or in its stead pain is sometimes referred to a point higher up and towards the base of the axillary region, where before none was complained of. At this stage of the operation of the remedy the patient often falls asleep relieved of all his distressing symptoms.

After the lapse of another quarter of an hour, a free and equable perspiration takes place over the entire surface, which lasts for a period varying from one to two hours. In the mean time, the pain, which had shifted from the lower margins of the inferior ribs of right side, will again manifest itself at or near its original position, or may be referred to one totally different, as the lumbar region, or even the right hip. With the next dose, similar effects will be observed to take place with like regularity and certainty, and with each succeeding one the interval of relief from pyrexia (in hepatitis and pain referred to the part affected, as well as sympathetic pains of shoulder, arm, etc., which latter are at times distressing) will gradually become longer, till at length, in favorable cases, the relief becomes complete and constant. After several doses of the medicine, the urine is much increased in quantity (particularly in the cold season), is limpid, and passed without uneasiness. The increase is chiefly at night, causing the patient to awake suddenly, perhaps three or four times, for the purpose of micturition.

After a few days the appetite is much improved, and the patient craves for more food, which may be given, provided it be light, nutritive, and easily digested; but solid food should on no account be permitted, as its ingestion would, in all probability, provoke a recurrence of all the acute symptoms. The above are the more obvious symptoms experienced by the patient after the exhibition of the medicine; some of which, as the diaphoresis, diuresis, etc., being objective, are easily ascertained by the physician.

But there are other symptoms produced by the drug in hepatic disease which are peculiarly and directly referable to the liver and related parts, and lest these should be wrongly interpreted by the physician—as I have known them to be by the patient himself—as evidences of the medicine disagreeing so as to contra-indicate its use, a short account of them becomes necessary.

The symptoms now to be described occur shortly after taking the chloride (in five minutes to half an hour), and are referable either to the liver or related parts. They are variously described by different patients,—a circumstance not remarkable when we consider how different may be the description of material, form, or color, by different individuals concerning one and the same object.

Sometimes a "shock" is felt, or as if "something gave way" in the side; at other times a succession of shocks is experienced in the hepatic region, accompanied or not by a "pricking sensation" ("pins and needles"); or the action is described as that of "a pulling" from one hypochondrium to the other, or from the margin of the right costal arch upwards and backwards, as if through the liver; or "a clawing," "working," or "gnawing sensation" is spoken of as felt by the patient. When a single sharp shock is experienced in a debilitated, nervous, and susceptible subject, it is generally severe, and I have known the patient to cry out in consequence, frightening the other patients in the ward, and being himself alarmed. Immediately afterwards the severe hepatic pain vanished, and never returned with its original severity; and with each succeeding dose a sensation of "pulling" only was felt in the hepatic region, till at length all sensible action ceased with the removal of the hepatic congestion, the case being one of simple enlargement of the liver.

With the local actions excited in the liver and related parts (through reflex nervous action), when a full dose of the medicine has been taken, motor impulses are similarly communicated to the muscles of the intestinal canal, causing its peristaltic action to become more rapid and energetic, as evidenced by the twisting and other movements experienced in the situation of the duodenum, or all over the abdomen, and which, at times, are more sensibly felt in particular parts, in the situation of the umbilicus or in the inguinal region. Simultaneously with, or closely following, the above phenomena, the abdominal muscles may be thrown into tonic contractions, which are perceptible at times to both sight

and touch, and pulsatile movements are felt, and are sometimes visible, along the margins of the right inferior ribs. I have, in the paper above referred to, shown that all these phenomena are highly purposive, contributing, with other vital actions and processes brought about by the action of the medicine, to diminish portal congestion, restore the diseased liver to a healthy state, and afford relief to the entire system.

It need not occasion surprise if, in the treatment of a case, say of hepatitis, accompanied by great anxiety, pain, and tenderness in the hepatic region, and general pyrexia, the patient should fail to inform the medical attendant of the *special symptoms produced by the medicine*, unless specially requested so to do. In instances in which, as it turned out afterwards, the special symptoms were most striking and singular, the patients failed to give a spontaneous account of them. In these instances they appear to be wholly absorbed in their sufferings, and although aware of what takes place after the exhibition of the medicine, they are incapable of distinguishing between the effects of the latter and some new phase of the disease, with which they doubtless sometimes confound them. But tell such a patient to observe the effects of the medicine from the moment he swallows the dose till the cessation of all sensible action, so that you may interrogate him at the next visit as to the symptoms experienced, and the regularity and certainty of its action, as well as the varied and characteristic symptoms induced, and the relief afforded, will be sufficiently manifested.

RECAPITULATION OF THE TREATMENT OF PRIMARY ACUTE HEPATITIS.

In the early stage, should there be no accompanying diarrhœa, a mild purgative may be administered at the commencement; afterwards some simple diaphoretic mixture, in frequently repeated small doses, should be administered till the skin becomes moist and perspirable. Fomentations or bran poultices applied to the seat of pain in the right hypochondrium will afford much relief, and should be continued as long as they give relief, and repeated from time to time on the recurrence of pain. In some instances the application of six or eight leeches to the chief seat of pain, when this is severe and attended with much tenderness, and the patient is not reduced, may be necessitated; but in general even this amount of local depletion is not required.

The diet should at this time consist of arrow-root, sago, milk and water; barley water may be taken freely (to assist the operation of the diaphoretic), and afterwards beef tea may be allowed.

As soon as the symptoms, local and general, shall have abated, and diaphoresis been freely established by the above means, the chloride of ammonium should be commenced in doses of gr. xx twice or thrice daily, and persistently administered till its characteristic and special action be no longer manifested. On the cessation of its sensible action, should liver enlargement, with feeling of stiffness, weight, or other uneasiness, continue, it may be administered in small doses (gr. v to x) thrice daily for some time afterwards, with beneficial results.

During the whole of this time the patient should be kept in bed, for it must be borne in mind that the condition of an inflamed liver is not unlike that of an inflamed joint, demanding strict quiescence in the recumbent posture; and therefore a steady and intelligent attendant should constantly wait on the patient in all acute and severe cases, and the bed-pan and urinal should at all times be at hand, so that the patient may not have the least occasion to quit his bed. It must be borne in mind, as pointed out by Morehead, that the *complete restoration* of the inflamed portion or portions of the liver is not coincident with the cessation of febrile symptoms and local sense of pain and symptoms referable to the affected part; in fact, recovery must be considered incomplete till several days have elapsed from the cessation of the pain and febrile disturbance, during which time the patient should still be confined to his bed, and carefully watched, so as to guard against relapse. By these means, in the majority of cases, a speedy and effectual cure by resolution will be effected.

Abscess of the liver.—In military practice it frequently happens that hepatitis does not come under treatment till the peculiar symptoms pointing to abscess, either impending or already formed, are manifested, or it may occasionally happen that, in consequence of bad diathesis, advanced stage, or other cause, recovery by resolution does not take place under treatment,

suppuration occurs, and hepatic abscess is formed. It is necessary to detect this event promptly, because it calls for a line of treatment different from that of the antecedent stage. The diet should now consist of light puddings, broths, or animal jellies, and wine may be cautiously administered if it does not excite the pulse or produce irritation of the gastro-intestinal surfaces; but *no solid food should be allowed.*

If the hectic fever arising in this stage of the disease be attended with colliquative sweating, the chloride of ammonium should be commenced at once in doses of gr. xx twice or thrice daily, and persistently administered till it no longer produces sensible action and all symptoms of hectic have disappeared, and during convalescence, and when hepatic pain and uneasiness have completely subsided, it may be given in smaller doses for some time longer. Should the irritative or hectic fever be attended with a hot and dry state of the skin, the preliminary treatment recommended in the early stage of acute hepatitis should be had recourse to. A moist state of the skin having been induced, no time should be lost in commencing the administration of the salt, as before directed.

In simple acute hepatitis, rest in bed and strict quiescence in the recumbent posture is absolutely necessary for the perfect and speedy recovery of the patient; but when abscess of the liver has resulted, the patient who is permitted to leave his bed, or even move about in bed, is exposed to a greater danger than the mere recrudescence of inflammatory action which inevitably results from inattention to this important rule: he runs the risk of rupturing the wall of the abscess (which may be making its way by one of the usual channels) before adhesion has taken place between the opposite surfaces of the peritoneum, an occurrence which would inevitably lead to a fatal result.

Congestion of the liver.—In congestion of the liver (simple enlargement) the chloride may be given in doses of gr. xx twice or thrice daily, according to circumstances, with careful attention to diet, and rest in the recumbent position, in acute cases; and it is to be carefully noted that in whatever form of hepatic disease the medicine is administered, if the skin be hot and dry, it should be preceded by some simple diaphoretic till the skin becomes moist and perspirable; or, if the skin be very hot, with a temperature of 103° to 104°, a sixteenth of a grain of ant. tart. may be given every three or four hours with the same intention.

Chronic hepatitis.—Cases of chronic hepatitis, with enlargement of liver, from long residence in India, and repeated attacks of acute hepatitis, are benefited and the liver enlargement reduced by the persistent administration of the salt in doses of gr. x to xx twice or thrice daily, according to the general principles already laid down, varied, of course, according to circumstances in individual cases.

"*Torpor of liver*" and functional derangements, attended by lithæmia (Murchison), associated with congestion of the liver, want of sleep, and depression of spirits, are benefited in a remarkable manner by a course of the medicine with careful attention to diet and regimen. In such cases I have known a few twenty-grain doses of the salt remove the symptoms of disordered liver, restore sleep, and revive the drooping spirits after the complete failure of other remedies.

Case of Congestion of the Liver illustrating some of the Special Symptoms produced by the Chloride of Ammonium in Hyperæmia of the Liver.—Pt. W. S., a stout, well-made man, of plethoric habit, was admitted to the hospital on the 12th of September, 1871, with febricula, —the result of drinking to excess for some days previously. He complained of a severe frontal headache, and his face was flushed.

Diaphoretic mixture was prescribed, and on the 16th he was free from fever, but still complained of headache. He did not complain of hepatic symptoms, as soldiers seldom do until seriously ill (or unless specially questioned on the subject); but, according to custom, I made an examination of the hepatic region, and interrogated him as to the symptoms of hepatic derangement, which I suspected. He stated that for the past eight or nine months he had suffered from a dull, heavy pain in the right side,—hypochondrium,—aggravated by lying on the right side; could not lie on the left side, owing to a sensation of weight and dragging when in that position; latterly, headache, loss of appetite, bitter taste in the mouth, and despondency accompanied the above symptoms, and the pain of side was aggravated by wearing his belts.

There was fulness of the right side in the hepatic region, and some tenderness on pressure beneath the margins of the false ribs. Right lobe enlarged upwards; swelling and tenderness in epigastrium, where there was increased area of hepatic dulness. There being no fever, and the skin acting properly,

he was ordered twenty grains of chloride of ammonium thrice daily, and to note its effects from the moment of swallowing the dose, so as to inform me of the same at the next visit. Beef-tea diet.

Sept. 17.—States that about ten or twelve minutes after taking the first dose of the medicine, a sensation of pricking ("pins and needles") and "pulling" was experienced beneath the tenth rib of right side (the point as shown by the patient was a little to the inner side of a line let fall from the right nipple); the pulling was towards spine. At the same time he experienced the sensation of rapid shocks proceeding from the point where the pulling was felt to a point as high as the seventh rib. Patient believed these shocks passed through the liver.

The medicine also produced general heat of surface and perspiration in the usual manner. Patient now felt much lighter and easier; the headache was removed, and he was able to turn on his left side without uneasiness or sense of dragging. After the second dose he felt a "pricking and tingling" in the part where the "pulling" was felt after the first dose; from this it extended all over the left side of the abdomen, but was more acute on the right side; it lasted a few seconds, when a perspiration broke out all over him, and he says he never sweated so much in his life before,—he perspired from "head to foot," and after the perspiration he felt light and refreshed, and a gentle heat remained in the right hypochondrium and in the right side of abdomen for the rest of the evening. The urine was not diminished. He was now entirely free from uneasiness and tenderness in the hepatic region, and the swelling in the epigastrium had subsided. Chloride of ammonium, fifteen grains thrice daily.

18th.—No enlargement of liver; no pain or tenderness; is able to lie on either side for any length of time without uneasiness; appetite much improved; headache gone. Discharged from hospital fit for duty, but to take the medicine in five-grain doses a few days longer.

Case of Congestion of the Liver, illustrating some of the more unusual Special Symptoms produced by the Chloride of Ammonium in Hepatic Disease.—Lance-Corporal J. R., a stout, plethoric man, of fairly temperate habits, was admitted to the hospital on the 23d of September, 1871, complaining of fulness and sense of distention in the epigastrium, and pain and uneasiness about half an hour after taking food. During his service in various parts of India and Burmah has had nine admissions to hospital with dysentery, three hepatitis, three hemorrhoids, and several with dyspepsia. For three months or so previous to admission suffered from dyspepsia, morning sickness, and vomiting, and used frequently to vomit his food after taking meals; complained also of sensation of "smothering" when lying on his left side,—the easiest position being on the back. Skin cool; pulse quiet.

On examination, considerable fulness is perceptible in the epigastric region, where there is also tenderness on pressure and increased area of hepatic dulness. Was ordered twenty grains of chloride of ammonium twice daily. Beef-tea diet; one pint of milk and one pint of corn flour.

Sept. 24.—States that from two to three minutes after the dose of the medicine yesterday evening a sensation of "two cold narrow streaks" started off right and left from the tip of the ensiform cartilage, and coursed along the margins of the false ribs on either side, until they reached a point about an inch outside of lines let fall from the nipples. Thence the cold streaks extended down the thighs in the central line as far as the centre of each patella. The sensation of cold moved along about as quickly as a painter would draw his brush in graining, and when the knees were reached the legs beyond became hot, and broke out in perspiration, which thence extended all over the body; the perspiration was profuse, and lasted about an hour. After this the sensation of weight and suffocation, which formerly prevented his lying on his left side, was greatly relieved. Continue treatment and diet.

25th.—Yesterday, two minutes after taking the morning dose, "a cold streak" (this time single and of greater breadth) spread over the left side of the abdomen as far down as the pubis, and afterwards all over the abdomen. The perspiration which followed was not so great as before. Could now lie on left side with ease, but was cautioned against doing so. Continue medicine and diet.

26th.—The medicine yesterday was only followed by a sensation of cold, this time stopping just half-way between the umbilicus and pubis.

27th.—Medicine has now no sensible effect; enlargement in epigastric region gone. Amm. chl. gr. viii thrice daily.

29th.—Discharged well.

Case of Simple Enlargement of the Liver (Congestion) treated and (in the first instance) diagnosed by the exhibition of Chloride of Ammonium.—The case furnishes an illustration of what may be called *medicine-diagnosis.* The patient sought admission to hospital with frontal headache and feverishness, attributable to exposure to the sun, for which the salt was prescribed; and its special and characteristic action on the liver being manifested led to the detection of the hepatic affection.

Gr. A. W. O., 7–5 Royal Artillery, thirteen years' service in India, was admitted to hospital on the 10th of June, 1872, complaining of pain in his head, accompanied by giddiness, and at times dimness of sight; complained also of loss of appetite and sleepless-

ness at night. A few days before admission had been exposed to the sun on duty, to which circumstance he attributed his illness. Bowels regular; slight feverishness; skin hot and dry; tongue clean. To have diaphoretic mixture ℥i every third hour.

June 11.—Still complains of frontal headache, pain shooting through temples; skin warm and moist; secretions regular. To have chloride of ammonium gr. xx twice daily. In persistent headache, after other means fail, I find a few doses of chloride of ammonium sometimes effectually remove it.

12th.—States that about half an hour after taking the first dose of the medicine he felt a peculiar creeping sensation at the pit of the stomach, and about twenty minutes afterwards a "rushing" sensation to the right side, in the region of the liver, took place, which then darted to the head; afterwards the pain left the head, and has not since returned. Soon after a profuse perspiration broke out over the entire surface. On examination I found the liver enlarged in all directions; hepatic dulness extending upwards in the right mammary line beyond its normal limits, and downwards in the same direction for an inch and a half beneath the right costal arch. On directing the patient to lie on his left side he was sensible of a "weight" or "dragging" sensation in the right hypochondrium, although he had not noticed this symptom before. Felt no inconvenience on his back or on lying on the right side. Pulse 68; temperature normal; respiration 20. Continue the chloride of ammonium.

13th.—No return of the headache. Feels less "dragging" in the right side when he turns on his left; bowels regular; tongue clean; slight pyrexia. Pulse 76; temperature 100.5°; respiration 24. Continue medicine.

14th.—Liver enlargement much reduced; the anterior margin extends only half an inch beneath right costal arch. Feels no weight or dragging on lying on left side; can lie in any position with ease. Passed a large quantity of urine yesterday. Medicine now only produces a sensation of warmth in the epigastrium, followed by slight perspiration. Amm. chl. gr. x twice daily. He remained in hospital, taking the medicine in small doses in bitter infusion, till the 18th, when he was discharged quite well.

The following case of acute hepatitis, which was kindly forwarded to me by Staff-Assistant-Surgeon J. A. Clery, M.B., I give *verbatim*, as it well illustrates the efficacy of the ammonium chloride in cases of tropical hepatitis.

"Pt. Stevens, æt. 27, was admitted into hospital on the 30th of May, 1872, suffering from acute hepatitis. During his protracted service in India, of eight years' duration, he had enjoyed good health, until on arrival in Secunderabad, in January last, he was seized with pains in the hepatic region, which subsided in a few days, but returned with renewed intensity on the night of the 28th of May.

"The following notes of his case were taken on June 1. Patient's face is flushed and expressive of great suffering; his brow contracted; breathing short, and apparently attended by much distress. The skin has a mottled appearance, and on the application of the hand communicates a burning sensation. Temperature 103°; the pulse beats 100, full and throbbing; the heart's action is excited, but unattended by any deviations from the normal sounds. Dyspnœa and a short dry cough prevail, for which we can find no adequate physical signs, as there is normal resonance all over the chest, except towards the base of the right lung anteriorly, and the respiratory murmur, although louder than natural, is otherwise unaffected. Tongue is furred; appetite deficient; thirst urgent and distressing. He complains of acute pain over the liver, extending along the borders of the false ribs and all up the side to the shoulder; this pain is aggravated by lying on the right side; most relief is felt when on the back inclined to the left side. All over the painful part there is exquisite tenderness. Greater part of the abdomen is tympanitic; but we find increase of dulness in the right hypochondriac region, extending downwards to a level with the umbilicus and upwards to the fifth rib. His temper is irritable; depression of spirits prevails, with restlessness and want of sleep.

"I prescribed a podophyllin pill and diaphoretic mixture (℥i every two hours until diaphoresis set in); locally six leeches were applied, followed by fomentations over the hepatic region.

"June 2.—The dry heat of skin has been replaced by free diaphoresis, attended by some slight alleviation of his sufferings. Temperature 101.4°; pulse 105. I prescribed gr. xx amm. chl., morning and evening,—the fomentations and diaphoretic mixture to be continued during the day.

"3d.—Stevens enjoyed a good night's rest, and appears quite cheerful to-day. The following is his description of the effects following the administration of the drug: 'The medicine had a saltish taste, which produced an inclination to vomit; this was followed by heat in the side, which extended all over the body, until I was covered with perspiration. In about an hour's time I subsided into a refreshing sleep, and on awaking felt that the pain had vanished.' The temperature in the evening had fallen to 99.8°, and the pulse to 98.

"4th.—Pain has returned, but in a mitigated form. Temperature 99.8°; pulse 100.

"5th.—Improving; continue chloride. Temperature 99°; pulse 100.

"6th.—Pain and tenderness over the hepatic region have greatly abated; the dulness has descended from the fifth to the sixth rib, neither does it extend farther than one inch below the false ribs. Pulse 95; temperature 99.8°.

"7th.—Much relieved; slept well. As patient looks ill and anæmic, I allowed him six ounces of wine. Temperature 98.8°; pulse 80.

"8th.—Patient is altogether free from pain, except when he attempts to lie on the right side; the liver is apparently reduced to its normal dimensions. Reduced the chloride to five grains *bis in die*.

"10th.—Patient may now be said to be convalescent, as he is quite free from pain, except in violent exertion; can lie on either side with perfect ease, but on taking a full inspiration he feels a slight catch in his side. Temperature 98.8°; pulse 78.

"15th.—Since last report patient has been progressing favorably; his appetite is good and strength returning.

"20th.—Discharged convalescent."

BRECON, SOUTH WALES, March 11, 1877.

PERFORATING ULCER OF DUODENUM—DEATH; AUTOPSY.

BY JOS. BERENS, M.D.

J. W., male, æt. 54, had been more or less of an invalid for eight or ten years,—his sufferings being referable mainly to the stomach and bowels. He had an almost constant feeling of uneasiness and distress at the epigastrium, which was aggravated by the ingestion of anything, whether fluid or solid. Eating was not infrequently followed by vomiting, which always afforded relief. The bowels had been habitually confined. Recently, under the pressure of business complications, his health grew much worse. The dyspeptic symptoms became more prominent, the pain at the epigastrium more severe, the vomiting more frequent; no blood ever appeared in the vomited matter.

At 7 P.M., March 20, he was suddenly taken with what he described as violent cramps in the stomach. He fell to the floor and rolled about in agony. When seen half an hour later, he was lying on his back in bed, with pale, anxious countenance; skin cool and covered with moisture; knees drawn up; pulse 110, full and soft; respiration rapid and shallow, and interrupted at frequent intervals by a short groan, accompanied by a straining effort, as in difficult defecation. The abdominal muscles were set and rigid, but there was little tympany. The tongue was covered slightly by a white fur. He referred the pain to the upper portion of the abdomen, and at the same time complained of a constant urging to stool. Shortly after the beginning of the attack he vomited the supper he had just eaten. A half-grain of morphia was given hypodermically, and ten grains of Dover's powder by the mouth. A mustard plaster was ordered on the abdomen. At 8.45 he vomited about a pint of very dark fluid unmixed with food. At this time he said the pain was less and had shifted to the right iliac region. His tongue was thickly covered with a dirty brown fur, the abdomen tympanitic, the pulse very feeble, intermittent and rapid. By the advice of Dr. H. C. Wood, who had been called in consultation, twenty drops of tincture of digitalis were administered hypodermically. Every twenty minutes a quarter of a grain more of morphia was also given. The patient continued to grow progressively weaker, and at about 1 A.M. died, after an hour's quiet and comparative freedom from pain.

At the post-mortem the intestines were found much injected, and the peritoneum covered, here and there, by a thin deposit of lymph. The pelvic cavity contained a quantity of greenish fluid, with a very slight admixture of what appeared to be fecal matter. In the duodenum, a quarter of an inch from the entrance of the common duct, an oblong perforation was found, a third of an inch long by an eighth wide; this communicated with a chamber which opened into the duodenum by a large circular orifice nearly half an inch in diameter and surrounded by indurated and infiltrated connective tissue. The openings had a clean punched-out appearance, with smooth, rounded edges, as though the perforations had long been nearly complete and finally became so by the rupture of a thin remaining septum.

TRANSLATIONS.

DIAGNOSIS AND CURE OF POST-PARTUM HEMORRHAGE FROM EXTENSIVE RUPTURE OF THE CERVIX UTERI.—It is only recently that rupture of the cervix has been well understood as a cause of profuse hemorrhage in the third stage of labor, although the characteristic symptoms have been made known long since by numerous observations. Known narrowness of the cervix, particularly in cases of oblique and foot presentations with early escape of the liquor amnii, great development of the head, sudden descent in wide pelves, escape of fluid blood immediately after the birth of the child, persistent return of this bleeding even where the uterus has contracted well,—all these indicate rupture of the cervix, even where the point of rupture cannot be felt with certainty. Dr. H. Fritsch, writing as above in the *Deutsch.*

Zeitschr. f. pract. Med., says he has always been able to control bleeding under these circumstances by applying a twenty per cent. liq. ferri persulph. solution directly to the wound. Twelve hours later a two per cent. carbolic acid solution should be used, and again after twelve hours the cleansing out of clots by the hand begun. Occasionally hot (112° F.) water may be used, or bimanual compression. Sometimes, however, all fail, and the patient succumbs to anæmia.—*Cbl. f. Med.*, 1878, p. 32. x.

Case of Acute Hemorrhagic Infarction and Spontaneous Gangrene of the Testicle. — Volkmann (*Berliner Klin. Wochens.*, 1877, No. 53) reports a case of this rare affection in a boy of fifteen, who was suddenly attacked in the middle of the night with pain in the abdomen, diarrhœa, and vomiting. The next morning the left side of the scrotum was swollen, and the pain was confined to this part. There was some fever. Three days later, when seen by Volkmann, the patient looked almost collapsed, his face giving the impression of a person suffering from peritonitis. On examination no pain in abdomen, skin hot, pulse 100. The scrotum, swollen with hard inflammatory œdema, was nearly twice the size of one's fist, and, particularly on the left side, of a dark, inflammatory red color. It was very tender to the touch. When the patient was chloroformed, the left side of the scrotum was found to be hard as a board, excepting at a small point in the centre, where there was fluctuation, while the right was softer, and on deep pressure the right testicle, of normal size, could be felt.

The diagnosis of acute, spontaneous, purulent inflammation of the tunica vaginalis of the left testicle was made,—a rare affection, of which only a few cases are recorded. It was decided to lay open the supposed purulent deposit, and a longitudinal incision was made with antiseptic precautions. No fluid exuded, either spontaneously or upon pressure. The gaping wound showed the lax scrotal connective tissue changed by lymphatic œdema into a firm, transparent, myxoma-like structure. Nothing indicated a previous injury. On pushing the incision deeper, the tunica vaginalis propria testis showed of a deep bluish black, and on cutting through this about a teaspoonful of dark fluid blood escaped, and the testicle, swollen to four or five times its natural size, of a uniform dusky red, and showing a smooth, shining surface, could be perceived. It was quite separable from the surrounding parts, which showed numerous veins filled with thrombi. No sign of gangrene.

The treatment was expectant, the wound being closed with carbolized cotton changed every few days. No suppuration took place, but a circumscribed dry gangrene of the testicle and neighboring parts resulted, and these latter in mass were gradually expelled from the surrounding tissues, separated from them by a line of healthy inflammation, and finally sloughed off, leaving the other testicle intact. The patient made a good recovery. x.

Hydrocele cured by Electro-Puncture.—Macario (*Cbl. f. Chir.*, No. 3, 1878; from *Gaz. Med. Ital. Lomb.*) treated two cases of hydrocele of the tunica vaginalis by electro-puncture, the duration of the sitting being one minute. One was quite cured. In the other case the hydrocele returned again after the lapse of ten months. In both the hydrocele had entirely disappeared within the first twenty-four hours, without the least escape of fluid through the puncture. Macario suggests the use of electro-puncture for other cysts, particularly ovarian cysts, and cites the three cases reported by Semeleder in the *Wien. Med. Presse* which were cured by this method. x.

Polypus of the Intestine as a Cause of Invagination.—Barthel (*St. Petersb. Med. Wochens.; Cbl. f. Chir.*, 1878, p. 79) found, on post-mortem examination, an invagination of six inches some eighteen inches above the valvula Bauhini. Above, the intestine was much enlarged by fæces and gas. Just at the upper end of the invaginated intestine lay, like a valve, a submucous fibromyoma the size of a pigeon's egg. B. explains the occurrence of the invagination as follows. 1. The polypus gave rise to repeated stasis of fæces in that portion of intestine directly above it, accompanied by distention of the intestinal walls. 2. On account of this distention, the ganglion cells in the intestinal walls finally became unable to act. 3. But these ganglia govern that portion of the intestine lying next below the polypus, so that paralysis occurred. 4. This paralytic portion of intestine subsequently became invaginated up to the point where the polypus itself forbade further progress. x.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, APRIL 13, 1878.

EDITORIAL.

THE NEW HOSPITAL FOR THE INSANE.

MOST of our readers are aware, no doubt, that the project of a new hospital for the insane in this neighborhood has come to a lame and impotent conclusion. We had hoped to be able by this time to point to an establishment embodying the best architectural arrangements, built at a reasonable cost, and in every way creditable to the commonwealth. To understand how this hope has been frustrated, we have only to look back on the several stages of the enterprise, where we shall find a succession of mistakes any one of which was calculated to jeopardize its success.

Mistake 1st.—In the act by which the hospital was created, in the session of 1876, an appropriation was made of only $25,000. Of course, with so small a sum nothing could be done, and thus one year was lost, —one more year of misery added to the lot of many an inmate of the poor-houses of this district. This was mistake the first.

Mistake 2d.—At last an appropriation of $600,000 was made for obtaining a site and erecting the buildings completed and ready for occupation, the cost not to exceed $800 per patient, thus providing for over 700 patients. This is an unprecedented cheapness, and could be accomplished, if at all, only by means of the most honest, careful, and skilful management. This, of course, would depend on the kind of men to whom the business of carrying into effect the act of the Legislature was to be intrusted. For this purpose the Governor appointed ten persons, two of whom were medical men, and all of good repute, we believe, in their respective callings. It does not appear that any one of these gentlemen, excepting Dr. Morton, of this city, had any special qualification for the duty. Indeed, it is doubtful if any of them had ever been inside of a hospital for the insane, except as casual visitors, or had ever manifested any special aptitude for business. To such persons was intrusted the duty of finding and buying a site, of accepting plans, preparing specifications, and making contracts. Their incompetence was rendered all the more disastrous by their large number, which was greatly in the way of speedy and efficient co-operation. To assemble them all together at every stage of the proceeding, desirable as it was, was not always possible without delay, residing, as they do, in different counties, and often absent from home. A Commission, consisting of three persons with a reputation for honesty and business-like ability which would insure the respect and confidence of the community, knowing something of hospitals, or, if not, ready to learn of those who do, would have had the work well under way in six months' time or less, and that, too, in strict conformity to the law, and with justice to all concerned. Thus was made mistake the second.

Mistake 3d.—The Commission, having chosen a site,—which, to their credit be it said, is an admirable one,—advertised for plans, not foreseeing, apparently, that many would be offered indicating as little knowledge of the requirements of a hospital for the insane as they had themselves. True, they were not bound to adopt any one of them, but they were bound to examine them and pass judgment upon their merits, having promised the sum of $300 to each of the authors of the best five. The next step was to choose an architect and direct him to make up a plan, by some eclectic process, from those which had received the prize. As he was one of the competitors, he naturally selected his own

plan, which, by a marvellous coincidence, happened to be very like that offered by one of his neighbors. So that actually little or nothing was gained by this round-about process, though at the expense of some time and money. Had any of these gentlemen designed to build a house or store, instead of advertising for plans,—which is about the last thing they would have done,—they would have applied directly to some architect of established reputation, expressed their wishes in general terms, and accepted his plans. Had this sensible and customary course been taken by the Commission, the result, we are sure, would have been far more satisfactory. As it turned out, the plan furnished by a gentleman who has made the construction of hospitals a life-long study, and actually been concerned in the building of more than any other man in the country, was treated like the other four, and in the election of architect he obtained but one vote out of the ten, though his successful competitor had scarcely any experience in this class of buildings. Here was mistake the third.

Mistake 4th.—The act of the General Assembly declared that the plans should not be altered without the consent of the State Board of Charities. That is to say, whether the plans were good or bad, this board could not interfere unless an attempt were made to alter them. If it were peculiarly qualified for such a duty, we cannot but wonder that it was not intrusted in the first place with the making of the plans, or at least with the examination of those offered by the architects. This idea of working by a wheel within a wheel seems to have been a favorite one with that Legislature, for it provides that the Commission shall make reports once in six months, of its expenditures, to the State Board of Charities, though it gives the latter no authority over them whatever,—neither to increase, diminish, nor change them. How efficiently this board acted when its interference was actually called for, we shall soon see. This was mistake the fourth.

Mistake 5th.—When contracts for building were offered, it was found that none of them came within the terms imposed by the act, viz., $600,000, including the land, which had been purchased for $59,000. The language of the act was imperative. It was drawn by men who believed that the hospital could be built for the sum mentioned, and were determined that it should cost no more. Under these circumstances the obvious duty of the Commission was to have stopped then and there and reported to the Legislature their inability to comply with the requirements of the act. They decided neither to do this nor to proceed on the best terms they could get, but to build the hospital piecemeal; and so a contract was made whereby the administration building, one of the wards for excited patients, the roofs to the corridors connecting the different sections, some workshops, all the plumbing, and all the machinery for heating and ventilation, were left out. For so much they agreed to pay a little over $382,000. By what process they arrived at a course which is a palpable infraction both of the law and of the plainest dictates of common sense, is quite inconceivable. And the mystery becomes all the greater by the fact that they had before them *the offer* of Mr. Sloan *to build the hospital in compliance with the terms of the act*, according to his plan, which had received one of the prizes and was unquestionably the best one presented. Had his offer been accepted, his high professional reputation would have given us the assurance of a hospital skilfully arranged, faithfully built, and well worth all the money that it cost. Why the State Board of Charities did not step in at this juncture and exercise their power to stop any movement calculated to frustrate the purpose of the act, remains to be explained by them. It is certainly beyond the power of anybody else to explain. A more fla-

grant betrayal of a trust assumed by that board—even solicited by them, if we are not misinformed—we do not remember. Here was more than one mistake, if that be not too mild a term.

The Commission have put out a statement meant for a reply to the strictures of the public press, though it explains nothing and defends nothing, in which they make light of the piecemeal proceeding they have ordered. They say that the administration building, that in which the officers reside, in which company is received and the business of the institution transacted, can very conveniently be replaced by the old farmhouse on the place; the males and females of the violent class can be kept together in the same section,—as if there were not the slightest impropriety in such an association; the workshops may be dropped out of the plan without the slightest compunction,—as if the idea of employing the patients were only an idle fancy; and the long covered ways may be left uncovered with little or no discomfort to the patients and employés obliged to pass through them every hour in the day and often in the night. This must verify to any doubting mind the statement we made in the beginning, that the most of these gentlemen are supremely ignorant of the purposes and practices of a hospital for the insane.

The specifications present matter for comment far beyond our allotted room. We can only say of them, as somebody once said of an act of Parliament, that they are so loosely and vaguely drawn, you could drive a coach-and-six through the most of them. They provide a medley of things, some cheap and mean, some costly and extravagant. For instance, a door of unprecedented inefficiency and ugliness closes a room that is lighted by a window seven and a half feet high! If cheapness were to be a paramount consideration, we cannot understand why the walls should be faced with smooth pressed brick, while good rough bricks well bedded in good mortar, with joints nicely struck, and bound with honest headers, would make a wall stronger and not unseemly, and with a saving, we venture to say, of $20,000; nor can we consider it as other than a useless expense to provide for flooring boards only two inches wide, when boards four or five wide would be preferable in every respect.

The contract for warming and ventilating, it appears, is to be made separately and independently, so that in the specifications for the rest of the work we find no reference whatever to these objects; and yet we have supposed that the humblest builder knows that preparation for them must begin in the very foundations of the building. Of course, all this will be followed by much tearing down and building up, by many awkward devices and an imperfect result.

The architectural arrangements specially bearing on the care of the patients we must now pass by in silence, except one. The Commission, in their circular soliciting plans, required that the different sections, each containing about a hundred patients, should be placed eighty feet apart and connected by corridors one story high. To say nothing of the greater cost of this arrangement, it is open to objections of the most serious character. That it will prove the source of incalculable inconvenience, and of increased expense both of construction and maintenance, of defective surveillance and lax discipline, is obvious enough to any one who has had the least practical acquaintance with the management of a hospital for the insane.

A prime requisite in hospital construction is facility of surveillance. Any plan which fails to provide for this object in the highest possible degree is, to that extent, defective. Now, it is the result of all experience, as might be expected on general principles, that the nearer the employés are brought to the chief, the more perfectly will they be kept under his observation; the farther their field of duty is removed

from his headquarters, the more opportunity will be afforded for neglect of duty and abuse of trust. Can any one suppose that a portion of a hospital a half or a quarter of a mile away will be visited by the chief as often and as carefully as if it were only a few rods off? This facility of observation, very necessary in all hospitals, is peculiarly so in those for the insane; for in others, where the ailments are of a bodily nature, the patients are better able to take care of themselves.

These great distances must necessarily increase the labor of the service, for much of the time of the officers and employés must be consumed in travelling from one building to another. This, of course, must impair the efficiency of the service, for the rule is that the more time and trouble required in its performance, the less satisfactory will be the result. The food, for instance, cannot be distributed from the common kitchen to such long distances, without getting cold and unpalatable, in spite of tight-covered vessels and steam-tables. Again, the superintendent ought to go through every ward every day,—a duty difficult, at best, with the frequent, unavoidable interruptions, but rendered far more so by the greater draft thus made on his time and strength.

The only reason we have heard for this extraordinary departure from the usual style of connecting the different sections of a hospital, is the diminished risk from fire. It is enough to say, in reply to this, that if the hospital were built as every hospital should be, with the sections separated by thick walls and iron doors, the chance of fire spreading from one to another would be rendered so extremely small as to be more than compensated by exemption from the hourly trials and troubles induced by this wide separation, aggravated as they will be by leaving the corridors uncovered.

We would not have it understood that every member of the Commission acquiesced in the course it pursued. We need not mention names to assure our readers —most of them, certainly—in believing that from one of the number, at least, it met with intelligent, strenuous, and persistent opposition.

LEADING ARTICLES.

METALLOTHERAPY.

IT is probable that few of the readers of the *Times* are familiar with the history of Dr. Elisha Perkins and the metallic tractors. But among the older members of the profession there are doubtless some who remember to have heard *their* elders recall this delusion, as we of the younger generation sometimes hear our fathers speak of the Morus multicaulis mania, or of some other long-forgotten "rage."

Dr. Perkins, a respectable practitioner of Norwich, Conn., during the latter half of the last century, conceived the idea that metallic substances might have the effect of removing diseases, if applied in a certain manner; a notion, says Dr. O. W. Holmes,* probably suggested by the then recent experiments of Galvani, in which muscular contractions were found to be produced by the contact of two metals with the living fibre. It was in 1796 that his discovery was promulgated in the shape of the *Metallic Tractors*, two pieces of metal, one apparently iron and the other brass, about three inches long, blunt at one end and pointed at the other. These instruments were applied for the cure of different complaints, as rheumatism, local pains, inflammations, etc., by drawing them over the affected part very lightly for about twenty minutes.

Dr. Perkins took out a patent for his tractors, and travelled about the country to diffuse the practice, which spread amazingly. Aided by his son, these instruments were introduced, chiefly, it must be admitted, into domestic practice, both in this country and abroad, the inventor realizing a fortune from their sale. In Denmark they were used in the hospitals of Copenhagen, and a large book was published by the physicians there, containing an account of the numerous cases cured by

* Currents and Counter-Currents. Boston, 1861.

the tractors. A very amusing puff of the practice was published under the pretended form of a poetical satire, entitled "Terrible Tractoration," in which, while assuming the part of a critic, the poet in reality lauded the invention and its inventor in every possible manner. We have recently had an opportunity of examining the volume, which contains a colored steel-plate frontispiece representing the medical profession, with wig and cane, advancing, armed with gigantic enema syringes and the like, to quell an ardent devotee of tractoration, who kneels beside a sufferer on whom he applies the metallic tractors, regardless of consequences. "See," says the poet, in the classic metre of Pope,—

> "See *pointed metals*, blest with power t' appease
> The ruthless rage of merciless disease,
> O'er the frail part a subtle fluid pour,
> Drenched with invisible galvanic shower,
> Till the arthritic staff and crutch forego,
> And leap exulting like the bounding roe!"

In a few years, however, the bubble burst, and by 1811 the tractors are spoken of by an intelligent writer as being almost forgotten.

But science, like history, repeats itself, and one is forcibly reminded of the tractors in reading a report of a clinical lecture recently delivered by Dr. Charcot, the renowned professor of nervous diseases at La Salpêtrière, on "Metalloscopy and Metallotherapy applied to the Treatment of Grave Hysteria."* Not, of course, that there is any suspicion of fraud or perhaps even of delusion connected with the "new treatment," but the methods and results are sufficiently alike to provoke a comparison.

Metallotherapy, or, as it has been proposed to call it, "Burcqism," was introduced to the notice of the profession by Dr. Burcq, of Paris. Prof. Charcot was induced to make trial of the method in his wards, and was so much struck by the result that he delivered the lecture above mentioned, giving an account of the modus operandi of the treatment, and expressing—somewhat guardedly, it is true—considerable interest in the matter and belief in the efficacy of metallotherapy.

It is, says Dr. Charcot, in that form of grave hysteria known as hystero-epilepsy, in which, in addition to the epileptic seizures, anæsthesia or hemianæsthesia, amyosthenia, and amblyopia are frequent symptoms, that Burcqism is peculiarly efficacious. It is of two kinds, external and internal.

External metallotherapy consists in applying metals to the surface of the body of sick persons. Internal metallotherapy consists in the internal administration of metals whose external use has shown them to possess certain powers.

In order to ascertain the metal suitable to a given case of hystero-epilepsy, the procedure called by M. Burcq "metalloscopy" is employed. An hysterical patient presenting, for example, left hemianæsthesia is examined by running a needle through the skin of the arm, and sensibility is found to be wanting. Then some bits of metal, one or more gold pieces, for instance, are applied to the skin of the affected side and maintained in contact with it for some time.

If the patient is sensitive to the metal selected, by the end of a variable period, from a few seconds to twenty minutes, she will feel numbness in the arm, which, if then pricked with a needle, shows returning sensibility. This is the first stage of the successive disappearance of the abnormal symptoms, and, among others, of anæsthesia. Hysterical anæsthesia is almost always accompanied by amyosthenia, but after the application of metals the patient acquires a very marked increase of muscular strength.

If the metal is kept applied to the skin, a curious occurrence is observed: the sensibility which had returned disappears once more, and often the recurrent anæsthesia is more intense than previously. If, on the contrary, the metal is taken away as soon as sensibility returns, this persists for several hours, and sometimes for one or two days. Moreover, it becomes general. But this is only temporary, and the patient soon relapses again.

Frequently, the occurrence of what Prof. Charcot calls "transfer-phenomena" is observed. The effect of the metal placed upon the anæsthetic arm is noticed in the corresponding part of the unaffected arm, an anæsthetic patch being observed to appear in this locality as the anæsthesia disappears from that part of the other limb covered by the metal. "Thus," says Prof. Charcot, "a sort of balance or displacement of sensibility is produced, which is certainly one of the most singular phenomena revealed by metallic applications."

* Lancet, 1878, vol. i. Nos. 3, 5, and 9.

Not only is the disappearance of anæsthesia determined by these applications, but also that form of amblyopia called achromatopsy, or narrowing of the field of vision in respect to colors, which is one of the symptoms of hystero-epilepsy.

This narrowing may extend to the loss of all notion of colors, so that the patient sees all objects as if painted in sepia. The colors disappear in regular order, first violet, then green, red, yellow. Blue is the last. "This is an occurrence," says M. Charcot, "which an hysterical patient can scarcely guess or be acquainted with." In the case of a certain hysterical woman on whom the experiment was made, hemianæsthesia and amblyopia of the left side existed, and all notion of colors had been lost in the left eye. This patient was sensitive to gold; a plate of this metal was applied to her left temple. A quarter of an hour later, various colored papers were passed before her eye, when it was observed that the perception of colors came back gradually according to the following order: first blue, then yellow, then orange, then green; violet was the last to be distinguished. On removing the gold plate, the faculty of distinguishing colors slowly disappeared in the same order in which it had come. This experiment could be repeated in the case mentioned again and again.

The same means which have been used to determine the metal appropriate to the patient may also be employed to ascertain the period at which the patient ceases to be under the influence of the diathesis. In the case of a woman under M. Charcot's care, in whom all the symptoms of hystero-epilepsy had disappeared under the influence of metallotherapy, gold was the metal which had been employed. The test was made then by applying some gold pieces to the left arm, the left side having been the one originally anæsthetized. Fifteen or twenty minutes after the application the patient complained of discomfort, became drowsy and ready to fall asleep. On pricking her arm with a needle it was observed that sensibility, which had been normal before the operation, was now almost entirely absent. There was, therefore, according to M. Charcot, cause to believe that the patient was still under the influence of the diathesis, in other words, not entirely cured. In speaking of this circumstance he compared the action of the metal in these cases to that of ether, which brings out symptoms of a similar character in patients apparently cured, but in whom the diathesis has not been completely eradicated.

The metal required in a given case having been ascertained by the process of metalloscopy, it remains to put the treatment in practice. As above mentioned, two methods of metallotherapy have been experimented with, the external and the internal. External metallotherapy, as practised by Dr. Burcq, who alone has employed it, consists in attaching plates of the metal found to be suitable to different parts of the body, until in some cases the patient may be covered as with a coat of mail. This metallic application, as employed in one case recorded, induced at first a slight return of sensibility; but when continued the sensibility diminished again. After some time, however, an apparent cure was effected, but relapses occurred, and it was necessary to begin again the whole treatment, which, eventuating in the patient's recovery, extended over six or eight months.

Internal metallotherapy is, however, according to M. Charcot, most promising. Having practised metalloscopy, as above described, and having ascertained the particular metal to which the patient is sensitive, this is administered internally. Thus, if gold pieces produce the desired effect, the chloride of gold and sodium is prescribed; if copper, the acetate of copper, etc.

When Prof. Charcot was first approached by M. Burcq with the account of the new method of treatment, he placed four cases of grave hysteria, which were in his wards, at the latter's disposal. These were patients affected with hystero-epilepsy who had been in the hospital for eleven years and were considered incurable. Their cases were well known to many observers. In three the condition was greatly ameliorated; the fourth, if metallic anæsthesia be taken as a criterion, was entirely cured. Hemianæsthesia which had persisted for eleven years had disappeared, and the hystero-epileptic fits, which had formerly been very frequent and complete, had become very rare. In addition, Prof. Charcot referred to two cases of cerebral hemianæsthesia in which there could be no suspicion of hysteria, both of which were completely cured by metallic applications.

He mentioned at this point that hysteric patients are occasionally met with who are not sensitive to any known metal. Also, that the application of the suitable metal is without any effect when it is made at the time of the great attacks. A period of calm must be chosen in order that the action of the metals may be brought out in full relief.

Such is an epitome of Prof. Charcot's view of the new treatment by metallotherapy; and although at first sight the cures wrought by it may seem to have but little connection with the reputed wonders worked by "pointed metals," yet the two systems of treatment will be found on examination to have much in common. It is well known that the condition of mind known as "expectant attention" is highly favorable to the action of many influences upon the system. Dr. Carpenter, in his Physiology, gives instances where physical changes have been produced under the influence of this condition by inert medicines or simple passes or other meaningless movements. At the time when Perkinism was rife in England, Drs. Haygarth and Falconer, of Bath, selected certain patients in the hospital under their care for their experiments, employing two wooden tractors of nearly the same shape as those of Perkins and painted so as to resemble them in color. The cases chosen were those of chronic rheumatism in the ankle, knee, wrist, and hip, and of five patients all except one experienced great relief. Mr. Richard Smith, of the Bristol Infirmary, pursued experiments similar to those of Dr. Haygarth. In the case of a patient suffering with a rheumatic affection of the shoulder which rendered his arm perfectly useless, the man was told that there was an instrument which had been serviceable to many in his state, and he consented to undergo the operation. Leaden tractors were used. In six minutes no other effect was produced than a slight warmth on the skin, but on the next day the patient was able to lift his hand from his knee (which he had endeavored in vain to accomplish just before the use of the tractors). The treatment was continued some time, wooden tractors, and finally iron nails, covered with sealing-wax, being employed, and the patient at length so far recovered that he could carry coals, etc.; yet previous to the use of the spurious tractors he could no more lift his hand from his knee than if a hundred-weight were upon it. Dr. Haygarth gives the case of a man who had received but little benefit from medicine and was obliged for some time to hobble upon crutches with much difficulty and great pain. He attributed his illness to a violent cold. Upon the first application of the tractors (which were formed from a piece of bone) to his thigh, he experienced a pricking sensation; in a few minutes he could hardly persuade himself that they did not cut him. At the end of the operation he could use his limbs more freely, but complained that the doctor had driven the pain into his knee ("transfer-phenomenon"?).

"With such evidence as the foregoing of the advantages arising from the employment of wooden tractors," says Dr. Tuke,* "we may safely take the alleged success attending the use of metallic tractors as a fact, and only demur to the mode in which it is attained." And such, it seems to us, should be the attitude of the profession towards metallotherapy. X.

CORRESPONDENCE.

LONDON LETTER.

THE lectures before the Royal College of Physicians are just commencing. The first series are by Prof. Ferrier, of King's College, on the Localization of Function in the Brain; the second, by Dr. Pavy, on Diabetes; and the third, by Dr. Bucknill, on Insanity. Dr. Ferrier delivered his first lecture on the 15th of March. It was well attended, the theatre being crowded, for the generous way in which Dr. Ferrier acknowledges the work of others renders him a personal favorite, to say nothing of the attractiveness of the subject-matter. He commenced by pointing out that our knowledge of the nervous system is behind that of other organs, and that there is little general agreement yet beyond certain limited points. The morbid anatomy of the nervous system is not coextensive with its pathology, and as yet we can do no more than speculate as to the anatomical conditions which lie at the root of neuralgia, epilepsy, and other conditions. A certain series of symptoms must be found with a certain lesion with more frequency than can be accounted for by chance before their association causally can be admitted. In insanity the anatomical substrata of the different forms are not yet discovered, and the general paralysis of the insane is the only form in which the

* Influence of the Mind upon the Body, Phila. ed., 1873.

lesions are well recognized. And even when certain changes come to be found, it will not be easy to say whether they are the cause or the effect of the malady. A whole hemisphere may be destroyed without apparent consequences, but if a lesion exist in the same centres on both sides then the consequences are palpable enough. Observations as to altered mental states are not yet sufficiently minute and careful. And we had not as yet a regular standard by which to measure minds, else probably it would be found that even unilateral lesions are not without mental consequences. As to experiments upon animals low down in the vertebrata, they cannot be applied to man, and even similar experiments upon different animals have not been in strict agreement. The frog-and-pigeon physiology has done much harm to what is after all the most advanced of all forms of research into the functions of the nervous system. The facts of clinical medicine are not always sufficiently borne in mind by experimental physiologists. On the other hand, it has been stated by Brown-Séquard that cross-paralysis, which has been taught since the days of Aretæus, is neither an absolute rule nor an approximative generalization; but the fact is it is true, except for some two hundred cases collected from all antiquity. It does not seem to be occurring now, though it is quite possible that it occurs in rare cases, like transposition of the viscera. The great preponderance of evidence is in its favor. It would appear that as the hemispheres are evolved descending fibres also develop, which form afterwards the path of descending voluntary motor influences, and also of secondary degeneration when the motor centres are the seat of disease.

The modern view of the localization of function in the brain is of very recent origin. The famous Dr. Bright had correct views that unilateral epilepsy, not accompanied by loss of consciousness, was due to a lesion in the opposite hemisphere, in which he was followed by Dr. Samuel Wilks. But Dr. Hughlings Jackson was the first to associate motor disturbances with definite lesions. He observed, too, that they were not the result of mere transmitted influences, but were really discharges. The first definite motor centres were found by Fritsch and Hitzig. It was found that these motor influences were distinctly associated with the gray matter of the cortex. It had been said that it was impossible to localize the irritation, but that has been completely disproved. A distinct interval has been observed betwixt the application of the irritation and the movement, proving conduction. The view that movement is the consequence of mere physical conduction of the electric current is not supported by further experience. In performing experiments upon animals, allowances must be made for variations before the results can be applied to man, and before one set of experiments can be contrasted with another set upon different animals. It was found, however, that after removal of the cortex all truly voluntary movements involving consciousness were removed, though the lower movements, as the automatic or reflex, remained, being associated with lower centres beneath. Thus, after destruction of the cortex in a dog, the foot still remained unaffected as a mere organ of locomotion, but it had become useless for all purposes where it was used as a hand. For physiological experimentation strict typographical accuracy was essential, and the same was necessary for pathological observation: consequently the older records of brain-disease were of comparatively little value. Indeed, at present, experimental physiology was far ahead of pathological research, and what pathology had achieved was largely due to preceding physiological experimentation.

As to the functions of the frontal lobe, it had been found that removal of them in monkeys was not followed by motorial or sensorial disturbances, but by an impairment of attention. Many cases of accident in man corroborate the results of such experiment. The only case the lecturer quoted was the famous American crow-bar case, where an iron bar, three feet and a half in length, an inch and a quarter in diameter, and weighing thirteen pounds, was driven through the left frontal lobe of a miner. It had a distinct orifice at entrance and exit, and was blown some yards away. The man was stunned for a brief period, but soon recovered, and walked up a flight of stairs and gave a lucid account of the accident. He got well, and lived twelve years after, dying in epileptic convulsions. The man could work well enough after, but he was found to be so altered in his character that he was quite unfit for his place as a foreman. From a keen-witted, long-headed fellow, he became capricious, vacillating, and unstable. He seemed like a boy with the passions of a fully-developed man, and, indeed, became so demoralized and deteriorated by the effects of the accident that his friends said he was not himself at all. This quite agreed with the effects of lesions in the frontal lobes of monkeys. They lost neither sensation nor motion, but they became dull, listless, and apathetic, lost their natural inquisitiveness, and did not move about except with purposeless movements, as it were from mere restlessness. The subject will be pursued in the succeeding lectures. The crow-bar case was illustrated by drawings and photographs which were furnished by Dr. Bowditch, of Boston. Some account of the next two lectures will be given in my next letter.

At the risk of being charged with egoism and some vanity, I may refer to the subject-matter of an essay to which has just been awarded the Fothergillian gold medal of the Medical Society of London. The subject of

the essay was "The Antagonism of Therapeutic Agents," a matter of great interest at the present time, and one which will wax in importance in the future. With the exception of a confused impression as to the antagonism of opium and belladonna, our knowledge has been almost confined to chemical antidotes and their utility in poisoning,—the use of sulphuric acid and of iodide of potassium in chronic lead-poisoning being an example. But recent researches have demonstrated that many agents have a physiological antagonism, which may be utilized practically. Thus, Prof. Frazer, of Edinburgh, worked out the antagonism of calabar bean and belladonna in the most thorough and efficient manner. He showed that not only could minimum lethal doses be successfully antagonized, but that considerably larger doses could be met successfully by correspondingly larger doses of the physiological antagonist. He made most exact observations as to the effect of calabar bean upon the respiration and the circulation, and showed how, when both were failing conspicuously, the administration of atropia restored them completely. In fact, the interest of the experiments performed so far has lain around those rhythmically discharging centres which preside over the respiration and the circulation. The centres for the respiration are situated in the medulla oblongata, the *nœud vital* of Flourens; while those of the circulation are essentially the ganglia which lie in the septa of the auricles and betwixt the auricles and ventricles. In both these motor centres there is an accumulation of energy which explodes rhythmically and sets the muscular mechanism in action. It is these centres upon whose activity life depends, and it is the effects of toxic agents upon these centres which make them dangerous to life. The unconsciousness produced by opium is in itself of little importance: it is the failure of the respiration first, and then of the heart next, which constitutes the real danger; and paralysis of the nerve-centres of these systems is the action of opium in toxic doses which is to be feared. Oscar Liebreich first observed that strychnia and chloral possessed a powerful antagonistic action, which might be utilized in practice; and there is a well-known case, published by Dr. Levinstein, where an overdose of chloral had been taken, and which recovered, after most grave symptoms had manifested themselves, by the use of nitrate of strychnia injected subcutaneously. Many experiments were performed by the Edinburgh committee of the British Medical Association, presided over by the late Prof. J. Hughes Bennett, by which the antagonism of various agents was demonstrated and proved.

Then Dr. Crichton Browne demonstrated how the convulsions produced by picrotoxine, the active principle of the cocculus Indicus, could be controlled by chloral. It was very interesting to watch two rabbits to each of which a lethal dose of picrotoxine had been administered, but to one the antagonistic dose of chloral had also been given. The first was subject to recurrent attacks of fearful spasm, very much like strychnia spasms, including opisthotonos, culminating in a terrible final convulsion; while the other lay peacefully before the fire, wrapt in chloral sleep, an occasional slight twitch alone indicating the presence of the picrotoxine. But if this second rabbit were wakened out of its chloral sleep, then a picrotoxine fit would come on, resembling those in the rabbit without chloral; before a second convulsion could come on, the chloral narcosis had resumed its sway, and the animal slept on undisturbed, to awaken up well alongside the stiff corpse of its less fortunate companion. It was evident that discharges from large motor areas were excited by the action of the picrotoxine, and that chloral could restrain them if given in sufficient quantity. These experiments have had much to do in deciding the present large resort to chloral in asylums to control maniacs and general paralytics in their recurring infuriated outbreaks of violence.

Then a series of experiments were performed by the writer to test the antagonism of aconite and digitalis in warm-blooded animals. It was soon apparent that in the rabbit and the guinea-pig digitalis did not sufficiently antagonize the effect of the aconite upon the respiration to be useful. It exercised some effect if given from five to nine hours before the administration of aconite. It, however, maintained the action of the heart, which was found contracted firmly after death; but it did not prevent efficiently the action of the aconite upon the respiration. The belladonna was tried and found to be a perfect antidote, as might have been expected from its well-known action as a stimulant to the respiratory centres and to the cardiac ganglia. The animals, expiring with respiratory gasps at gradually lengthening intervals, began to respire more forcibly after the administration of belladonna, and more quickly, until normal respiration was regained. The atropia was effective in saving life up to sixteen minutes after the injection of the aconite,—a long time in aconite-poisoning, but if delayed longer it prolonged life but could not save it. Then strychnia was tried, and was found most effective, the animals recovering swiftly, often only to die in the expiratory spasm of strychnia when perfectly recovered from the aconite-paralysis. At this interesting point the Anti-Vivisection Act came into force, and brought to a close a series of experiments which are well worth carrying out by some investigator in a land less hampered than is Great Britain in the matter of scientific inquiry involving experimentation upon animals.

These observations as to the effects of certain toxic agents upon the action of other toxic

agents tell us much that can be made practically useful. In the first place, this physiological antagonism has been utilized in cases of poisoning, and strychnia-poisoning has been several times successfully treated by chloral, as well as the opposite in Dr. Levinstein's case. Dr. Dobie, of Keighley, used digitalis successfully in a case of aconite-poisoning, where the man was very far gone. Here the digitalis must have exercised some influence upon the respiration as well as the circulation, or else an effect upon the circulation is soon felt by the respiration, so closely are these two centres linked together. In a recent case the writer gave a grain of sulphate of atropia at once, subcutaneously, to a woman far advanced in opium-poisoning, with the effect of an early restoration of the respiration, which was notably failing while the pulse kept steady. Without previous acquaintance with the effect of the administration of a counter-poison to animals dying from the toxic effects of another poison previously administered, probably some hesitation might have been experienced as to the large dose adopted. The result, however, justified the size of the dose completely. In fact, our acquaintance with the subject of the antagonistic action of certain poisons must exercise a potent influence over the future of toxicology. Probably it will be found that the best plan of treating opium-poisoning will be to empty the stomach thoroughly, and then to inject subcutaneously a fourth or a third of a grain of atropia before the respiration has begun to fail; after that, to put the patient to bed, and watch assiduously the respiration, the circulation, and the body-temperature. If the respiration should still show indications of failing, to inject a second dose of atropia of equal size would be the best thing to be done, or even more if required. This would be much more effective than the plan of dragging the patient about and administering strong coffee, and would enable the medical attendant to take minute observations whose value we may not yet be in a position to estimate. A further outcome of such a plan of treating opium-poisoning would be that we would soon learn how far atropia could be trusted to antagonize the action of opium upon the centres of respiration and circulation, and how little it affects the action on the sensorium. There exist excellent grounds for believing that by such combination we will be enabled to give, without anxiety as to the result, much larger doses of opium or morphia than have hitherto been thought safe, in cases of severe pain, or in the fearful cough of some cases of softening tubercle. In all cases the toxic action of the opium upon the respiration should be made the ground for action, and not any change in the pupil, as has hitherto been done. The pupil is a dubious and unsafe guide, for it may be dilated by atropine even when the dose is utterly ineffective to arrest the opium-poisoning, as was seen in a case lately recorded by Dr. Paget, of Cambridge.

Other uses of such advancing acquaintance with the effects of toxic agents upon the respiration are developing themselves. When the respiration is embarrassed in asthma we know that belladonna often gives great relief, as it also does in whooping-cough. But in order to give a remedy with some approach to rational certitude in either of these maladies, it is well to note the general condition of the respiration and be guided in the selection of a remedy accordingly. If it be found excited, give an agent which calms the *nœud vital;* if depressed, a stimulant agent like belladonna is indicated. In a little time we shall prescribe with considerably more accuracy in these neuroses of the respiration. Then, too, in chronic bronchitis with emphysema, strychnia and belladonna are very useful, and in the bulk of cases give great relief. In more acute conditions they give much promise, and a friend of mine recently pulled through successfully, by the use of strychnia, a case of capillary bronchitis which seemed as if it must necessarily end fatally. It was with much satisfaction the writer read the paper by Dr. Reinhard Weber, in the *Philadelphia Medical Times* for February 2, on the use of belladonna in collapse, and the use of agents acting powerfully upon the respiration and circulation must obtain extensively in the future in temporary asthenic conditions where life is gravely threatened without death being unavoidable, and where a slight matter even may settle the question of life and death. But the subject cannot be pursued further within the limits of a letter.

A curious incident occurred at the Medical Society on the 18th of March. Dr. Weir Mitchell and Dr. Fordyce Barker, with Sir John Rose Cormack, of Paris, were recommended by the Council of the Society for election as Honorary Fellows. To the surprise of the Society, a black ball was found. So it became necessary to ballot for each singly, to discover for whom this black ball was meant. It turned out that it was for—or rather against—Dr. Fordyce Barker. The Society was very indignant at this cowardly proceeding, and was very sorry that any of its Fellows should have committed such a despicable act, as of course it did not affect the result at all. Such an act might furnish some satisfaction to the mean spirit which adopted it, but it made the whole Society, with this single exception, feel ashamed that such a thing should have been done towards one whom the Society felt it to be an honor to itself to elect an Honorary Fellow, and who is so well known on this side of the water as well as on yours. As a body we are only too proud to enroll Dr. Fordyce Barker's name on the list of Honorary Fellows.

J. Milner Fothergill.

REVIEWS AND BOOK NOTICES.

PROTEUS, OR UNITY IN NATURE. By CHARLES BLAND RADCLIFFE, M.D. London, Macmillan & Co., 1877.

The author introduces the book by quoting the legend of Proteus, taking the Bainian view, that Proteus was intended to typify the different elements and the availability of matter in its various transmutations for the creation of creatures of dissimilar type.

The book is divided into two parts, the one treating of matter, the other of force, and the "traces of unity," as the author terms it, to be found in both.

In Chapter I. the author indicates the traces of unity in plants, dealing with the relative value and citing instances of the interchangeability of their different parts.

In the next five chapters the traces of unity in the different parts and organs of the vertebrate and invertebrate animals are dwelt upon, and the readiness with which one organ or appendix may perform the functions of and actually develop into another part is clearly pointed out.

Chapter VII. is devoted to traces of unity in animals and plants. Part I. closes with a chapter on the unity in organic and inorganic matter. In Part II. Chapter I. deals with the various modes of physical force, and closes with the announcement that "the idea of unity underlies that of correlation," and that "the two must stand or fall together."

Chapters II. and III. are devoted to the traces of unity or, as it is subsequently called, the correlation of vital and physical forces.

In Chapter IV. the author takes up instinct and the traces of unity to be found in its phenomena. He concludes that "the phenomena of instinct are the effects of a force as general as that of gravity, and in which that which is physical and that which is vital may find a common centre."

In the next chapter the author, not satisfied with a pedigree which carries him back to Adam, claims that the sphere of his "transcorporeal presence is coextensive with that of this universe." This and the remaining chapters cover the traces of unity in the phenomena of memory, imagination, volition, and intelligence; also in the personal, social, and religious life of man. He finds "that the phenomena of mind point to transcorporeity, and through transcorporeity to unity in diversity and diversity in unity,"—a striking and lucid conclusion. He also argues that "without disembodiment man may be the image of God," and "that the sphere of humanity is wide enough to include the very widest conceptions of divinity."

In these later chapters he grapples with metaphysics till his English fails him, when he lapses into Greek. He fortifies himself by numerous Scriptural quotations, and then for the first time makes open issue with *evolution*, the enemy he has been fighting from the beginning, though his first mention of it is on the last page but seven of his work. He expressly says, "I can see nothing to be said in favor of evolution."

Whatever may be the reader's views on evolution and special creation, he cannot fail to observe that the author of Proteus has based forced and unscientific conclusions upon the facts he has adduced. Nothing but deep-rooted prejudice can account for the obliquity of vision which leads one who claims not only a unity of structure, but a unity of origin as well, for all things mundane and celestial, to fail in discerning a possibility of development of one form from another. With a degree of inconsistency and complacency the author can detect but a difference in degree between the human and the divine, while his pride of ancestry will not permit him to acknowledge that God might have produced his noblest work, not by an abrupt interference with his own established laws, but through their harmonious operation, by developing the nobler from the humbler. The author is indebted entirely for his scientific data to such men as Owen, Spencer, Darwin, Wallace, Huxley, and others. Yet he totally ignores all the more prominent of them. He is strongly addicted to long and labored compilations of trite instances. Thus, in the first chapter, with refreshing originality, he cites the megatherium and arranges it side by side with the two-toed sloth, and proceeds by comparing the webbed foot of the seal with the paddle of the whale, throughout the book advancing borrowed ideas and bringing forward facts without the slightest allusion to authority.

Chapters VI., VII., and VIII. contain many striking points of resemblance to the chapter on Homologies in Mivart's Genesis of Species. A very similar line of reasoning is pursued, and in numerous instances almost identical examples are set forth, all of which the reader is permitted to infer are quite new and original.

The book, evidently written in the interest of orthodoxy, is conspicuously chary even of the mention of those who in the cause of science may be supposed to have assumed an attitude in any way hostile to the cherished views of the strictest churchman.

The world may be the better, but it can be none the wiser, for the publication of the work.

J. B.

ATLAS OF THE OSSEOUS ANATOMY OF THE EAR. By N. RÜDINGER, M.D. Translated and edited by CLARENCE J. BLAKE, M.D. Boston, A. Williams & Co., 1874.

This portfolio consists of eight excellent photographs, of which the first only was made in this country, and of explanatory text. The text is well done, and the whole get-up of the work is very handsome.

GLEANINGS FROM EXCHANGES.

Another Case of Arsenical Poisoning successfully treated by Dialyzed Iron. —James Hayes, M.D., C.M., Simcoe, Ontario, in the March number, 1878, of the *Canada Lancet*, says that during the evening of November 14, 1877, he was summoned to Mrs. B.'s charwoman, who had accidentally taken at least a half-teaspoonful of arsenic. Half an hour to an hour after the ingestion of the poison, the stomach having been thoroughly emptied by an emetic, a tablespoonful of dialyzed iron, diluted with water, was given, and was rejected in a few minutes. Thirty-drop doses were employed every twenty minutes for two hours, and afterwards at longer intervals. About two hours after the doctor's arrival, alarming symptoms of collapse showed themselves; the pulse became extinct at the wrist; the skin cold and clammy, etc.; but by taking brandy freely, with the application of hot bottles and friction, she began to revive, and went on gradually improving until, in about ten days, she appeared to be restored to her accustomed good health.

Rapid Cure of Depressed Fracture of the Skull (*The Clinic*, February 16, 1878).—M. Cazin reports the case of a sailor-boy, aged 14, who received a blow on the head depressing the skull, and causing facial paralysis, mydriasis, and aphasia. In a consultation trephining was determined upon, but the boy's father objected. At his visit the next day the surgeon found the patient sitting up in bed playing cards. A day or two afterwards he remained up most of the day, and in five days the facial paralysis and mydriasis had disappeared, and the aphasia had greatly diminished. In twenty days all that remained of the trouble was the cranial depression. To-day he is perfectly well.

Treatment of Transverse Fracture of the Patella and Olecranon Process (*New York Medical Journal*, March, 1878).—Schede considers the obstacle to bony union in these fractures to be not so much the difficulty of coaptation as the delay (two weeks) in applying apparatus, occasioned by waiting for the absorption of effusion into the joint and the overlying bursæ. For the patella this treatment is recommended. Puncture of the joint (and the bursa patellæ, if necessary) with a good-sized trocar, with antiseptic precautions, injection of three-per-cent. solution of carbolic acid, closure of the wound with a piece of protective silk and a ball of salicylic cotton, approximation of the fragments by means of adhesive straps, and a gypsum splint from the ankle to the hip. The splint and plaster should be replaced by a second similar dressing at the end of eight days, and by a third in eight or ten days more. In three cases bony union was obtained, the bursa patellæ being punctured in but one. In two others a short ligament united the fragments. In these, failure is attributed to omission of some of the details above given, —*e.g.*, irrigation of the joint and renewal of dressing. In a large number of fractures of the olecranon in which bony union resulted, fixation of the fragments with adhesive straps and the plaster-of-Paris splint (in extended position), with frequent renewal, was the method employed. No case yet has demanded puncture of the joint.

Influence of Sulphate of Atropia on Night-Sweats, and on the Progress of Phthisis (*The Hospital Gazette*, February 1, 1878).—Oettinger employed sulphate of atropia in forty-five cases of phthisis. The solution contained one and a fifth grains to the ounce of distilled water, of which ten to twenty drops were given daily. In twelve cases the sweats disappeared with the first dose and did not return. In eighteen cases the sweats reappeared when the medicine was suspended, and he found it necessary to renew for a long time, with care to have occasional intervals of four to eight days. The only disagreeable results were slight pruritus of the neck, and dilated pupils. He concludes that the influence of sulphate of atropia on the temperature is absolutely negative. It also has no effect in checking the progress of the disease, except so far as the night-sweats are lessened and the invalid rests better.

MISCELLANY.

Tribute to a Philadelphia Physician. —We are so apt to think of foreign medical leaders and to overlook the merit of those of American growth, that such testimony as that given below comes sometimes with startling force. It is accorded to our townsman, Dr. Isaac Ray, in the last number of the *British and Foreign Medico-Chirurgical Review*: "They [his papers] are the production of a veteran student of psychology in the best and scientific sense of that term; of one practically and for long years acquainted with the relations between medicine and law as affecting the insane; of a calm, deliberative, judicial mind; of a pure, honorable, upright character; of a philosopher as well as a philanthropist; whose beneficent and successful labors in the cause of truth and humanity have gained for him, by the unanimous acclamation of his fellow-workers, the well-earned and noble title of '*the Master*.'"

Our learned friend who edits the *New York Medical Record* is becoming alarmingly brilliant. Witness the following extract:

"*Lister's Method.*—One reason why operations are nowadays so successful is probably owing to the fact that before they are commenced the operator very properly says, 'Let us spray.'"

TREATMENT OF METRORRHAGIA BY HYPODERMIC INJECTIONS OF ERGOTIN.—M. C. Paul, in the *Bull. de Thérap.*, gives the details of fourteen cases in which the uterine hemorrhage was arrested in from five to sixteen minutes, by the following solution:

Ergotin, 2 grammes;
Water,
Glycerin, āā, 15 grammes;

of which from 1 to 2 grammes were injected. M. Paul concludes that the hypodermic injection of ergotin is the most rapid and the most efficacious means that we have at our disposal in the treatment of metrorrhagia.—*Medical Press and Circular.*

TRICHINÆ IN THE FLESH OF GEESE.—Sixty soldiers of the garrison of Thionville lately fell sick of trichinosis, and two of them died. It has been ascertained that the disease arose, not from pork, but from the flesh of geese which they had eaten.—*Medical Press and Circular.*

NOTES AND QUERIES.

HOMŒOPATHY.

EDITOR OF THE PHILADELPHIA MEDICAL TIMES:

DEAR SIR,—The following editorial from the New York *Herald* of the 16th inst. may be of interest to many of your readers:

"HOMŒOPATHIC DILUTIONS.—There are one hundred and eighty physicians, more or less homœopathic, who are members of the Homœopathic Society, and it is said by themselves that only three of the whole number practise the real, original Simon pure, unmistakable *similia similibus curantur*, as the aforesaid was practised by Hahnemann himself at those periods of his life when he did not practise something else. But now arises at a homœopathic powwow an indignant orator, who declares that every member of this school who does not practise the homœopathic principle is a 'living lie.' Living lie is good! It is striking, vigorous, and melodramatic. If all these statements that the homœopathists make about themselves are true, there are, therefore, just one hundred and seventy-seven living lies of them, which ought to make a lievely company. If the three referred to are pure homœopathists, and the others depart from the dogma in various proportions, they may have it as they do the little pills to the one hundred and seventy-seventh dilution, which is pretty thin. And yet, upon an immutable principle of their own theory, the man who has got homœopathy in the one hundred and seventy-seventh degree—the feeblest of their dilutions—is the best homœopathist of all. This, of course, is on the principle that if a small dose is more effective than a large one a still smaller must be more effective than that small one, and so on *ad infinitum*. This is a doctrine consecrated by the teachings and practice of Hahnemann also. If that distinguished man, when he was giving pills of the millionth dilution, found them ineffective, he always knew immediately that it was because they were too strong. He substituted for them, in such cases, anything up to the ten-millionth dilution, and his patients immediately got well. This principle ought to be as good in its application to doctors themselves as to their pills, and the effort to apply it has, in fact, lately excited the homœopathic brethren. Some days ago the highest dilutions of them voted that, as the slang goes, they 'didn't want any *similia similibus* in theirs;' and now the other party has rallied, made a rush, captured the guns, and the standard of *similia similibus* waves triumphantly once more. All this is of peculiar interest to the public as showing that the homœopathic practitioners, so called, and a very great majority of them, are of opinion that homœopathy is a delusion that should now be buried decently."

Although this is a bold declaration of one of the laity, it expresses opinions which many of the regular profession have for years entertained about this "delusion," for so long a time abandoned, in practice at least, by the *vast majority*, to say the least, of even its own *devotees*.

Very sincerely yours,
W. H. H.

As many of our readers may not be familiar with the occurrences which have drawn forth the above and other similar editorials from the New York *Herald*, a few words of comment seem appropriate. The sensation made about a year ago in London by the assertions of Dr. Wyld, Vice-President of the Homœopathic Association of Great Britain,—the troubles which they gave rise to in the Association,—the fact that a large portion of the members openly acknowledged homœopathy as a delusion, must be familiar to all our readers. It appears that the same spirit of honesty which has troubled the waters abroad has moved in New York, and that even social honor, pecuniary hopes and rewards, professional etiquette and *esprit de corps* have not been sufficient to bind up the new Caliban.

We have not had time or opportunity to follow up in detail the discussion in the New York Association, but it appears to have culminated in the offering of the following resolution, which was, we believe, originally passed at a special meeting on the 8th of February, and again taken up about a month subsequently:

"*Resolved*, That in common with other existing associations which have for their object investigations and other labors which may contribute to the promotion of medical science, we hereby declare that, although firmly believing the principle 'similia similibus curantur' to constitute the best general guide in the selection of remedies, and fully intending to carry out this principle to the best of our ability, this belief does not debar us from recognizing and making use of the results of any experience; and we shall exercise and defend the inviolable right of every educated physician to make use of any established principle in medical science, or any therapeutical facts founded on experiments and verified by experience, so far as in his individual judgment they shall tend to promote the welfare of those under his professional care."

The discussion following the second introduction of this resolution was neither inane nor listless. On the final calling of the yeas and nays a tie resulted. One member, who had not voted, was subsequently induced to vote, which he did affirmatively, so that the resolution was carried.

Little by little is creeping out that which the regular profession has long known, namely, that for a man to be a homœopathic physician at present necessitates that he be ignorant, foolish, or knavish,—that is, if it be knavish "to live a lie." When Hahnemann arose, infinitesimals left cases of disease to nature, and nature was better than the medical practice of the day: so that Hahnemannism, though absurd, had a justification in its comparative results. But compared with the scientific cautious practice of the present, Hahnemannism has no justification, for the present practice acknowledges the supremacy of nature, and demands that the physician should only with cautious care strive to assist, not thwart, nature's plans and methods of relief.

Homœopathy has a seeming vigor to-day only because unprincipled men, whilst administering remedies in accordance with modern science, take advantage of the credulity of men, clergymen, and women, to delude with the idea that their practice differs greatly from, and is much less dangerous than, that of the regular physician.

ED. PHILA. MED. TIMES.

ERRATUM.

THE number of professors at the dental colleges is five instead of four, as was inadvertently stated in an editorial in this journal for March 30.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U. S. ARMY FROM MARCH 26 TO APRIL 6, 1878.

BACHE, D., MAJOR AND SURGEON.—Leave of absence extended one month. S. O. 44, Division of the Pacific and Department of California, March 18, 1878.

MCCLELLAN, E., MAJOR AND SURGEON.—Assigned to duty as Post Surgeon at Fort Vancouver, W. T., relieving Surgeon Alexander. S. O. 27, Department of the Columbia, March 13, 1878.

BARTHOLF, J. H., CAPTAIN AND ASSISTANT-SURGEON.—Assigned to duty as Post Surgeon at Fort Lapwai, Idaho. S. O. 27, c. s., Department of the Columbia.

BURTON, H. G., FIRST LIEUTENANT AND ASSISTANT-SURGEON.—Assigned to duty at Camp McDowell, A. T. S. O. 26, Department of Arizona, March 18, 1878.

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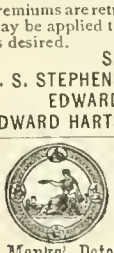

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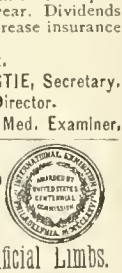

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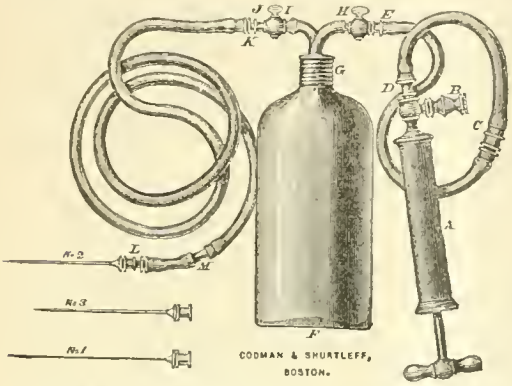

FIG. 68.

FIG. 69. The Stopper and Cocks supplied with apparatus No. 2.

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